



## ARL is an Authority on Nutrition and the Science of Balancing Body Chemistry Through Hair Tissue Mineral Analysis!

Hair Tissue Mineral Analysis



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## Vision Problems

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### Nutritional Aspects of Eye Conditions

Glaucoma, cataracts, retinitis, macular degeneration and detached retina are becoming more common, especially as our population ages. Over many years, we have researched mineral patterns associated with these conditions. As a result, specific mineral patterns have been identified that may provide insight into the causes of these conditions.

#### Glaucoma

Glaucoma is a build-up of fluid pressure in the eyeball. It is a common condition, especially among older individuals. Various theories exist regarding its cause. It is often thought to be due to improper drainage of the vitreous fluid from the eyeball. Nutritional correction of glaucoma is possible, but will not occur in all cases. Although glaucoma cannot be cured, it can be controlled, even possibly prevented. Several nutritional factors appear to be involved:

**Selenium and glaucoma:** Selenium toxicity is known to be associated with glaucoma. While it is relatively rare, selenium toxicity can occur from contaminated water supplies, excessive supplementation or occupational hazards.

**Fast oxidation and glaucoma:** Most cases of glaucoma occur in fast oxidizers - those with low hair calcium and magnesium levels and high sodium and potassium levels. A possible reason for this association is that fast oxidizers tend to have fluid retention problems. This stems from their elevated sodium level, which is associated with fluid retention. When the sodium level declines through a scientific nutrition program, the glaucoma condition (increased fluid pressure) often improves.

**Low sodium/potassium ratio and glaucoma:** Most hair analyses on glaucoma patients reveal a low sodium/potassium ratio. Often the ratio is severely low. A low sodium/potassium ratio is associated with problems of fluid balance. In order to correct the glaucoma, often the sodium/potassium ratio must first be normalized. Improving glaucoma often requires both a normalization of the sodium/potassium ratio and a lowering of an excessively high sodium level.

**Calcium deposition in the eyes:** Glaucoma is a blockage condition. Calcium deposition in the eye can be associated with development of glaucoma. Interestingly, however, most cases of glaucoma occur in fast oxidizers who have low hair calcium levels. These individuals, however, may not be retaining calcium in the bones, which may allow calcium to deposit in the eye structures.

#### Cataracts

Cataract is an opacity, or cloudiness of the lens of the eye. It is a common cause of vision impairment and blindness. Various causes are postulated for the formation of cataracts, including a reduced blood supply to the lens and oxidant damage, which is discussed below. The following nutritional patterns and influences appear to be important in the formation of cataracts.

**Calcification and cataracts:** Calcium deposition in the lens of the eye can cause opacity. It is possible that the prevalence of copper imbalance today is associated with the rise in cataract problems. Copper is needed for proper calcium retention in the bones. Copper imbalance can cause pathological calcium deposition in various tissues of the body. Often cataracts occur simultaneously with osteoarthritis, which is another example of calcium deposition in the soft tissues of the body.

**Toxic metals and cataracts:** In addition to copper toxicity, mercury toxicity has been associated with cataract formation. Mercury toxicity is usually caused by eating shellfish and large fish and in some cases from dental amalgams.

**Diabetes and cataracts:** Cataracts are one of the complications of diabetes. The cause is probably a reduced blood supply to the lens of the eye, or some other type of tissue degeneration secondary to the diabetes.

**Elevated calcium/magnesium ratio and cataracts:** A common hair analysis finding in cases of cataracts is a high calcium/magnesium ratio. This pattern is associated with calcification in general and is an indicator for disturbances in the glucose metabolism. Therefore it is not too surprising that this elevated ratio is found in many cases of cataracts. Correction of the calcium/magnesium ratio helps solubilize, or dissolve calcium deposits and is associated with an improvement in glucose tolerance.

**Imbalanced sodium/potassium ratio and cataracts:** Another finding is that cataracts are often associated with a low or high sodium/potassium ratio. A low sodium/potassium ratio is associated with disturbances in the glucose metabolism and with protein breakdown or catabolism. A cataract is indeed a type of breakdown of the tissue of the lens of the eye. A high hair sodium/potassium is an indicator of inflammation, which could possibly affect the lens in an adverse manner.

**Other nutritional considerations:** Vitamin B2 has been shown to be helpful for some cases of cataract. Cortisone therapy is known to be a cause of cataracts, perhaps due to its disruptive effect upon glucose tolerance. The bioflavonoids are important to prevent and possibly correct cataracts. Adequate levels of bioflavonoids block the enzyme aldose reductase. An excess of this enzyme is known to be associated with cataract formation.

#### Detached Retina

A detached retina is a condition in which the retina is torn away from its normal attachment in the eye. Depending upon its severity, vision may be mildly, or severely affected. Retinal detachments may be caused by a trauma or blow, but at times occurs without any apparent cause. Several nutritional factors may be involved.

**Protein breakdown and retinal detachment:** We observe that in many cases of retinal detachment the sodium/potassium ratio is low. This is an indicator of protein catabolism, or tissue breakdown. In some cases, this breakdown may affect the tissues supporting the retina, leading to a detachment.

**Other nutrients and connective tissues:** The retina is attached through ligamentous or connective tissues. It is known that these tissues require various nutrients to maintain their strength and integrity. These include manganese, copper, zinc, vitamin C and bioflavonoids. Protective nutrients such as vitamin E are also important to protect delicate structures from oxidant damage. Toxic metals such as cadmium and mercury interfere with the essential minerals and can be secondary causes of weakness of the tissues that support the retina.

#### Retinitis Pigmentosa And Macular Degeneration

Retinitis pigmentosa and macular degeneration are progressive eye diseases that cause a reduction of vision and may end in blindness. The exact cause is unknown, but recent studies indicate that zinc may be helpful to stop the progression of the disease or reverse the condition.

Nutrients that enhance the effectiveness of zinc include vitamin B6 and vitamin A. These can also be very important to prevent certain eye conditions. Toxic metals can also play a role. Cadmium and copper toxicity in particular interfere with zinc metabolism by replacing zinc in critical enzyme binding sites. Zinc deficiency is not always revealed directly on a hair mineral test. Hair analysis indicators for zinc imbalance are:

- Zinc level less than 15 mg%.

- Zinc/copper ratio less than 6.

- Phosphorus level less than 13 mg%.

- Cadmium level greater than 0.02 mg%.

- An elevated zinc level can indicate a zinc loss. Usually phosphorus will be low, or cadmium toxicity will be present.

- Copper toxicity (high or very low copper).

- At times, zinc imbalance is not revealed on the first test, but appears later as other imbalances are resolved that were masking the low zinc level.

#### Free Radical Damage And Eye Conditions

The eyes contain many delicate structures which are subject to damage by singlet oxygen atoms called free oxygen radicals. Eye structures are especially prone to free radical damage because they are exposed to sunlight, which includes potentially damaging ultraviolet rays.

Free radical damage can be prevented and even reversed by the anti-oxidant nutrients, which include vitamins A, C and E, selenium and glutathione. Thus, in addition to the specific nutritional imbalances discussed above for each condition, general nutritional support may also be very helpful for the prevention and correction of common eye problems.

#### Conclusion

Mineral research has revealed specific nutritional imbalances associated with common eye problems. By utilizing a properly performed and properly interpreted hair mineral analysis, more precision and better results can often be obtained in preventing and correcting debilitating diseases of the eyes.

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